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A NEW SPECIES OF *LACERTA* (SAURIA: LACERTIDAE) FROM
THE ZAGROS MOUNTAINS, ESFAHAN PROVINCE,
WEST-CENTRAL IRAN

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A new saxicolous species of the genus *Lacerta* is described based on material collected in 1996 from the Zagros Mountains, 3 km northwest of Fereydun Shahr, Esfahan Province, west-central Iran. The combination of relatively small size, 10 longitudinal rows of ventral plates, 7 pairs of submaxillary shields, single postnasal, masseteric shield minute or absent, complete row of granules between supraciliaries and supraoculars, 58–61 smooth, round, granular scales across dorsum, strongly compressed one-third distal part of tail, and unique color pattern distinguish it from all other species of *Lacerta*. The new species, *Lacerta zagrosica*, is related to the *Lacerta* Part II (sensu Arnold). It is likely restricted in distribution to the central Zagros Mountains in Esfahan Province, at about 2450 m elevation.

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The lacertid genus *Lacerta* Linnaeus 1758 (sensu lato) encompasses about 31 species, centering on the least xeric regions of the Mediterranean and extending through the northern and western mountain ranges of southwest Asia. Only two species, *L. vivipara* and *L. agilis*, occur outside of this region, extending the known range of the genus across northern Eurasia to about 63°N in eastern Siberia and east to Japan. In southwest Asia, the genus is confined to the Mediterranean coast, Turkey, and in Iran to the Zagros, Alburz, and western Kopet Dagh Mountains. In the southeast, it is found on the Arabian peninsula in the mountains of Oman (*L. jayakari* Boulenger, 1887, and *L. cyanura* Arnold, 1972)¹ (Anderson, in press; Arnold 1973).

In Iran, most species of *Lacerta* occur in northern, northwestern, and western parts of the country, and are closely related in distribution to the Zagros and Alburz Mountains. An exception is *Lacerta mostoufi* Balouch, 1976 which appears to be a disjunct taxon, adapted to highly xeric habitats and restricted in distribution to the Kavir-e-Lut on the southeastern part of the Iranian Plateau (31°12'N, 59°19'E) (Balouch 1976). So far, 13 species of *Lacerta* have been recorded for Iran, including the new and distinctive species from the Zagros Mountains, Fereydun Shahr, Esfahan Province (Figs. 1, 2) described here.

¹These are regarded by some as belonging to a distinct genus, *Omanosaura*.

SPECIES DESCRIPTION

***Lacerta zagrosica* sp. nov.**
(Figs. 3–6)

HOLOTYPE AND TYPE LOCALITY. — Adult male, GNHM Re. ex. 5149, collected by the senior author on 14 August 1996, from the Zagros Mountains, at about 2450 m elevation, 3 km northwest of Fereyduh Shahr (50°04'E, 32°58'N), about 140 km northwest of Esfahan city, Esfahan province, west-central Iran.

PARATYPE. — Adult female, GNHM Re. ex. 5150. Other information as for the holotype.

DIAGNOSIS. — A relatively small-sized lacertid (maximum SVL, 67.8 mm; TL, 114 mm.), assignable to Part II of the genus *Lacerta* (see Arnold 1973), and differentiated from all other species by possessing a combination of 10 longitudinal rows of ventral plates, 58–61 smooth, granular scales across dorsum, single postnasal, 7 pairs of submaxillary shields, complete row of granules between supraciliaries and supraoculars, obtusely keeled subdigital lamellae, masseteric shield very small or absent, dorsum greenish or olive brown with numerous dark spots, venter blue with black spots and dots on ventro-lateral region.

DESCRIPTION OF HOLOTYPE. — Adult male (preserved in 75% ethyl alcohol), with depressed body and slender tail; head distinctly depressed, its length less than twice its width (1.6), its depth about 60% of its width; head length about 28% of distance from snout to vent; snout pointed, about as long as postocular part of head; tail 1.69 times as long as head and body, slightly depressed at base, tapering towards tip and strongly compressed in distal one-third; frontal slightly shorter than its distance from tip of snout, about 1.75 to 1.90 times as long as its maximum width, narrowed posteriorly and in contact with two prefrontals, two supraoculars on each side, and two frontoparietals; parietals each about twice as long as its maximum width; occipital markedly wider than interparietal and more than half as long as interparietal length, and broadly in contact with it; four supraoculars, first small, not in contact with frontal, separated from it by prefrontal and second supraocular, second and third supraoculars large, subequal, the second in contact with prefrontal and frontal, the third in contact with frontal and frontoparietal, the fourth

small, almost as large as the first; supraciliaries 7/7, first the largest, separated from second and third supraoculars by a complete row of 14/13 granules; lower eyelid with 6–7 large, and about 12 smaller scales that form an opaque central disk; nostril bordered by internasal, a single postnasal, first upper labial, and rostral, the latter separated from naris by a very narrow rim; two loreals present, anterior loreal about half the length of posterior one, and in contact with first, second, and third supralabials, posterior loreal in contact with third and fourth supralabials inferiorly and with prefrontal and first supraocular superiorly; 5/5 supralabials anterior to subocular, 3/3 posterior to it; subocular more than twice as wide as long, borders mouth; three supratemporals decreasing in length posteriorly, the first longer than the two posterior temporals taken together, all supratemporals partly situated on parietal table of skull; temporal region covered by small scales, 60–63 on each side, scales larger than dorsals, 6 in a vertical line between supratemporals and last supralabial; anterior temporals larger than posterior ones, masseteric shield minute, tympanic shield weakly developed and elongate; lower labials 6/6; submaxillary shields 7/7, first three pairs in complete contact, but the other pairs entirely separated, fourth pair largest and in contact with fourth and fifth infralabials and separated from each other medially by 3–4 small scales, sixth pair almost as large as first and in contact with the fifth, an extra (seventh) shield on each side, elongate and in contact with fifth and sixth shields (Fig. 5); 28–29 gular scales in a straight line between collar and symphysis of chin shields; weakly developed gular fold present; collar not serrated, made up of 10 scales, fifth the largest and broader than long.

Dorsal scales granular, non-imbricate, smooth, oval and round, 58–61 across widest part of dorsum, three of which correspond to each ventral plate; ventral plates almost rectangular with very weak posterior imbrication, arranged in 27 transverse and 10 longitudinal rows, the first longitudinal row from midline widest, the outermost rows the smallest; some lateral scales bordering ventrals enlarged, up to 1/3 the length of these shields; 3 lateral granules correspond to one ventral shield; preanal plate strongly developed, broader than long, bordered by a semicircle of seven large scales; a patch of five transverse



FIGURE 1. Location of Esfahan Province on the Iranian Plateau.

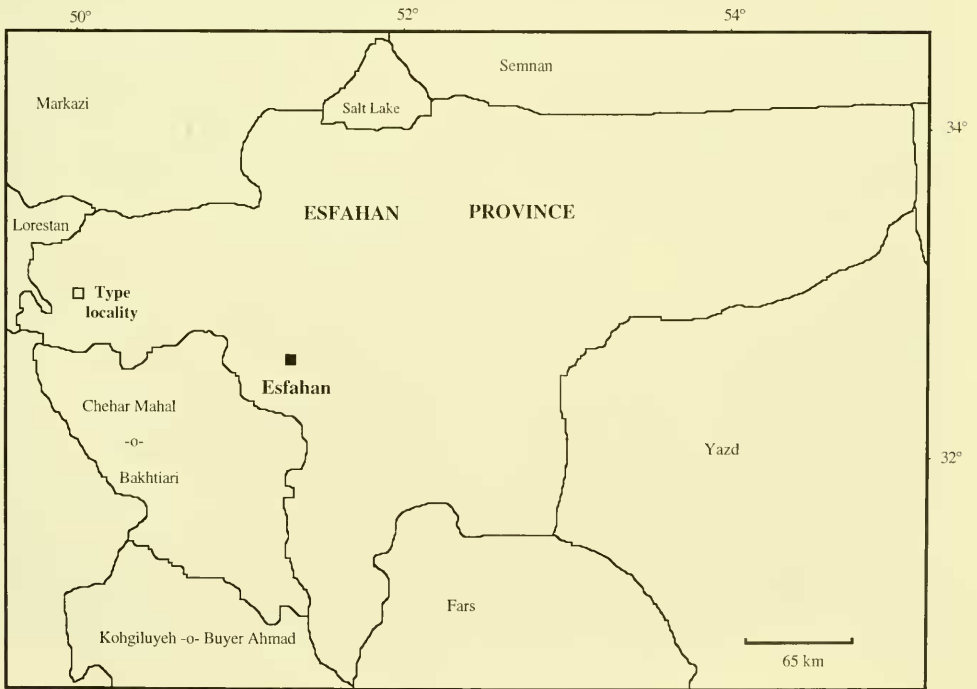


FIGURE 2. The type locality of *Lacerta zagrosica*, Zagros Mountains, 3 km northwest of Fereydun Shahr, about 140 km northwest of Esfahan city, Esfahan Province, west-central Iran.

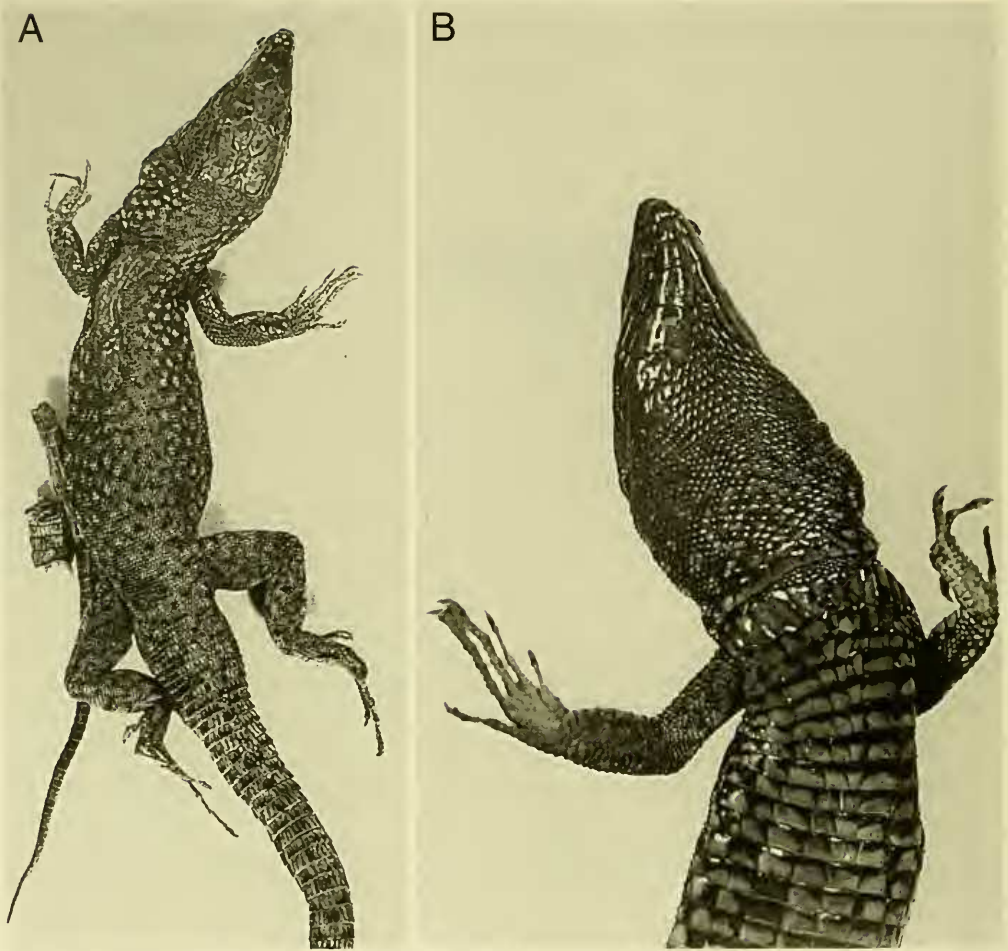


FIGURE 3. *Lacerta zagrosica*, holotype. A. Dorsal region, B. Anterior ventral region.

postanal scales, contrasting strongly with all other parts of body in coloration, being yellowish cream; upper forelimb with series of rather large shields above and granular scales below; a series of strongly developed shields under lower forelimb; hind limb with lateral and ventral series of strongly enlarged plates, which are not separated from each other by small scales; dorsal surface of thigh with granular scales, its anterior, and lateral surfaces covered by two series of enlarged plates; ventral plates separated from the femoral pores by two rows of somewhat enlarged, overlapping scales; 20–21 femoral pores, the two series just failing to reach the knees distally, separated from each other anteriorly by five small scales; tibia with two series of large plates, the largest series on the ventral and the other

series on the lateral surface. dorsal surface covered by small, granular, weakly pointed scales, slightly larger than dorsals, 20–21 in a transverse row in mid-tibia; digits of forelimb similar to hindlimbs in subdigital scalation; digits I, II, and V of hindlimb with one series of lamellae beneath, which are obtusely keeled towards the tip of digits, digits III–IV with two series, except the first phalanx, where there is only a single series; digits of forelimb have the same arrangement; all digits of both fore- and hindlimbs covered above by smooth plates, fourth digit the longest, third and fifth digits almost the same length, followed by the second, and first respectively; caudal scales nearly rectangular, much enlarged and elongate, forming distinct whorls, the proximal 10 whorls about half as long as median whorls,



FIGURE 4. *Lacerta zagrosica*, paratype. Top: Dorsal region. Bottom: Ventral region.

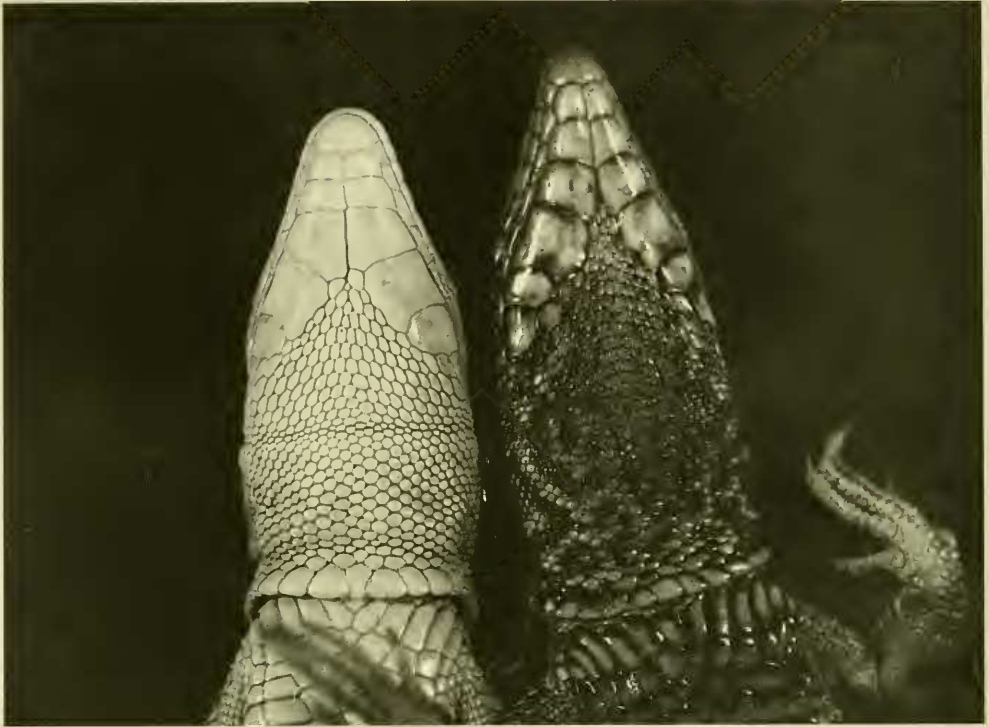


FIGURE 5. The comparison of submaxillary region in *Lacerta zagrosica* (right) and *L. brandtii* (left).

distal whorls smaller in size, their scales being more keeled and slightly pointed; each individual scale of the median whorls corresponds to 4–5 dorsal granular scales in length; dorsal and lateral caudal scales rather strongly keeled longitudinally, proximal ventral caudals smooth, distal ones to some extent keeled, 31 scales in the fifth caudal whorl behind vent; tail strongly compressed in distal one-third with more elongate and keeled scales, both dorsally and ventrally.

Measurements (in mm). Snouth-vent length (SVL): 67.8, tail length (TL): 114, head length: 18.8, head width: 11.5, head depth: 7, length of forelimb: 25, length of hindlimb: 38, tip of snout to forelimb: 28.

Coloration (in life and immediately after death). Dorsal surface of head olive brown green with irregular dark spots and dots, ground color of dorsum green, with numerous dark spots on sides having tendency to form a reticulation, encompassing light green spaces; these dark dots and spots less numerous on the vertebral region, which looks almost uniformly light green; dorsal surface of tail also light green with irregular dark

spots scattered throughout; upper surface of limbs reticulated, dark oval and round ocelli encompassing light green spaces; all of ventral surfaces dark blue, mixed with black spots and dots, these black markings most numerous on the ventro-lateral and gular regions; postanal region, corresponding four or five transverse scale rows, strongly contrasting in color with all other parts of body, being yellowish cream; ventral surface of tail uniformly light turquoise blue.

DESCRIPTION OF THE PARATYPE. — The paratype, an adult female, is similar to the holotype differing as follows:

Four supratemporals present on the right side; masseteric shield absent; tympanic shield smaller and more elongate; 11–12 temporal scales in a straight line between tympanum and orbit; 34–35 scales in fifth whorl of tail; preanal plate bordered posteriorly by semicircle of eight scales; number of submaxillary shields as holotype, but arranged slightly differently; the fourth pair of submaxillaries separated medially by 3 small scales; 58–59 scales across widest part of dorsum; supraciliaries 6/7; femoral pores 18–20;

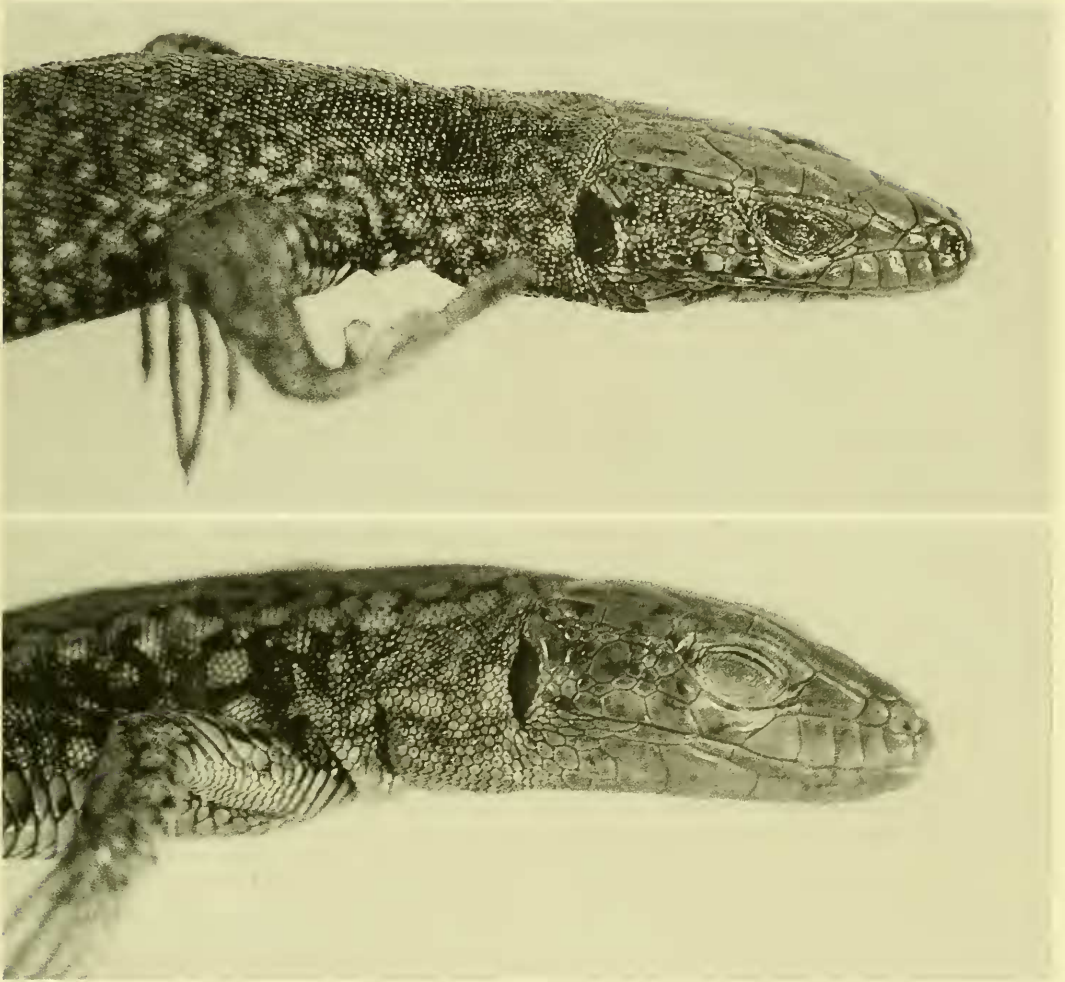


FIGURE 6. The comparison of temporal region in *L. zagrosica* (top) and *L. brandtii* (bottom). Note the absence of masseteric shield and the presence of a rudimentary tympanic shield in *L. zagrosica*.

lamellae under fourth toe 27/26; collar scales 11; 11/11 granules between supraciliaries and supraoculars; ventral plates in 28 transverse rows.

Coloration of paratype (in life and immediately after death). Dorsal surface of head light olive brown, with several very small dark spots; dorsum olive brown with numerous light ocelli scattered throughout dorsolateral regions; as well as numerous dark spots and dots on almost all parts of dorsum having tendency to make reticulation; dorsal surface of limbs as dorsum in coloration, but with larger light ocelli; upper surface

of tail light bluish brown with a few small dark spots on the proximal half; venter more or less whitish blue with a few dark blue spots on the ventro-lateral region; lower surfaces of limbs and tail light blue; pectoral and gular regions turquoise blue with numerous dark blue spots.

Measurements (in mm). Snouth-vent length (SVL): 57.8, tail length (TL): 97, head length: 14.6, head width: 8.9, head depth: 5.3, length of forelimb: 20, length of hindlimb: 33, tip of snout to forelimb: 23.

BIOTOPE AND ECOLOGY. — *Lacerta zagrosica* inhabits the same rocks as *Laudakia caucasica caucasica*, foraging on the rocks or under the rock crevices. The holotype was collected while basking on a rock; it was easy to see because of its vivid and brilliant blue ventral and greenish dorsal coloration. The paratype was collected about an hour later; it had taken refuge under a huge rock. It was not as brilliantly colored as the male (holotype). The area is a part of the central Zagros with an elevation of about 2450 m; it is a typical habitat for *Laudakia caucasica caucasica* (Fig. 7). The area was surveyed extensively without finding more specimens. *Lacerta zagrosica* appears to be a saxicolous species apparently restricted in distribution to the Zagros Mountains.

Also, two specimens of *Mabiya aurata* were collected from the same area.

TAXONOMIC DISCUSSION

Before Arnold's revisionary work on *Lacerta* (sensu lato) in 1973, at least 55 species were assigned to the genus. Of these, 49 species are limited to a relatively small part of the southwestern Palearctic region, but two, *L. vivipara* Jaquin and *L. agilis* Linnaeus, which do not penetrate into the Iranian Plateau, occur not only in this area but also range much more widely in Eurasia. Four members of the genus are also found in Africa south of the Sahara desert (Arnold 1973). In his review of the genus, Arnold (1973) removed the tropical and southern African species from *Lacerta*, and raised the subgenera *Podarcis* and *Gallotia* to generic rank. This author split the genus *Lacerta* (sensu stricto) into two groups. *Lacerta* Part I consists of large, robust species having strongly imbricate ventrals and serrated collars. These species usually inhabit areas of dense, shrubby vegetation. This group is composed of *Lacerta agilis*, *L. lepida*, *L. schreiberi*, *L. viridis*, *L. pamphylica*, *L. trilineata*, *L. princeps*, *L. strigata*, and *L. media*. The latter three species occur in Iran. The members of this group are distributed in north Africa (Morocco, northern Algeria, and northwestern Tunisia), mainland Europe, Mediterranean Islands, and western Asia.

Arnold's *Lacerta* part II consists of smaller species (usually less than 90 mm snout-vent length, *L. jayakari* with SVL = 165 mm being an exception). Almost all have brightly colored ven-

ters, at least the breeding males. They occupy a wide range of ecological niches, and many are adapted to living on or around the rocks. This group consists of about 24–26 species distributed discontinuously over almost the whole range of *Lacerta* (northern Africa, most of Europe, western and southwestern Asia) with the exception of *L. vivipara*, which is found over a very large area of Palearctic Eurasia.

Mayer and Bischoff (1996) in their taxonomic revision of the genus *Lacerta* based on morphological and karyological studies, excluded the subgenera *Zootoca* Wagler, 1830 (type species = *Lacerta vivipara*), *Omanosaura* Lutz, Bischoff and Mayer, 1986 (type species = *Lacerta jayakari*), and *Timon* Tschudi, 1836 (type species = *Lacerta lepida*) from the genus *Lacerta* and raised them to the generic level. These authors regarded *Lacerta* (sensu stricto) as the sister group of *Timon* based on morphological features. Mayer and Benyr (1994) placed *Zootoca* as the sister group of *Lacerta* (sensu stricto) based on the relationships of their serum albumins.

We have assigned *L. zagrosica* to Arnold's *Lacerta* Part II because of the many characters it shares with the other members of this group (e.g., small size, non-imbricate and brightly-colored ventrals, non-serrated collar, and special adaptations for living on the rocks). The members of this group often have small or disjunct ranges. This is almost certainly a relict distribution and indicates that the group has undergone considerable reduction of the area of its total range (Arnold 1973). This seems to be the case with *L. zagrosica* as it is apparently restricted in distribution to the central Zagros Mountains in west-central parts of the Iranian Plateau.

With regard to the present distribution of this lizard, we propose two alternative scenarios; (1) either it is the relict of a widely distributed group of lacertids which invaded from the Mediterranean region and northwestern Iran towards the southern regions along the Zagros Mountains during unfavorable climatic conditions of the Quaternary, acquiring special adaptations for living on or around the rocks [based on some similarities which it has with the archaeolacertids of Caucasus (e.g., depressed head, smooth dorsals, slender and fragile tail), this scenario is favored], or (2) it is one of the northernmost isolated and fragmented populations of an ancient group of



FIGURE 7. A view of the Zagros Mountains, 3 km northwest of Fereydun Shahr, Esfahan Province, west-central Iran, habitat and type locality of *L. zagrosica*.

lacertids which once were continuously distributed throughout the central, south-central, and southeastern parts of the Iranian Plateau. The presence of *L. mostoufi* Balouch, 1976 in southeastern Iran and the occurrence of two lacertids (*L. jayakari*, and *L. cyanura*) on the mountains of Oman [which, most likely, once were connected to Iran through the shallow Strait of Hormoz (Anderson 1968:363)] favors this latter hypothesis.

The degree of relationship of *L. zagrosica* with these southern taxa is yet to be established. However, it is similar to *L. cyanura* in having a depressed habitus, two series of obtusely keeled lamellae under some digits (III–IV), slender limbs and tail, a series of strongly developed plates under lower forelimb, and approximate absence of masseteric shield. In the latter two characters, *L. zagrosica* is also similar to *L. jayakari*, though there are significant differences in body size and meristic counts between the two taxa.

In 1968, the Street Expedition to Iran collected seven specimens of *Lacerta brandtii* from the

Zagros Mountains, 10 km north of Kuh Rang in Esfahan Province about 60 km south of the type locality of *L. zagrosica*.

Otherwise, *Lacerta brandtii* has a disjunct range, mainly distributed in northwestern Iran, East Azarbaijan Province as well as contiguous regions of the Azarbaijan Republic (Anderson, in press).

Geographically, the nearest species of *Lacerta* part II to *L. zagrosica* is *L. brandtii* and then *L. cappadocica urmiana*. The latter has already been collected from the Zagros Mountains, Kermanshah Province, western Iran (Rastegar-Pouyani, in press). We have examined and compared several species of *Lacerta* part II with *L. zagrosica* (see Material Examined).

Lacerta zagrosica is easily distinguishable from *Lacerta chlorogaster*, *L. praticola*, and *L. mostoufi* in having smooth dorsal scales and a non-serrated collar; from *L. cappadocica urmiana* in the absence of transparent shields on the lower eyelid, having 7 pairs of submaxillary shields, only one postnasal, and in color pattern; from *L. brandtii* in having only one postnasal, 7

TABLE 1. Comparison of morphological characteristics in *Lacerta zagrosica*, *L. brandtii*, and *L. cappadocica urmiana*.

Characters	<i>Lacerta zagrosica</i>	<i>Lacerta brandtii</i>	<i>L. cappadocica urmiana</i>
Ventral plates (longitudinal)	10	8	8
Submaxillary shields	7 pairs	5 pairs	5 pairs
Dorsals at midbody	58–61	47–52	52–69
Gular scales (single row)	28–30	23–26	32–35
Femoral pores	18–21	16–20	22–27
Translucent window on the lower eyelid	absent	absent	present
Masseteric shield	rudimentary or absent	strongly developed	absent
Tympanic shield	small and narrow	large and elongate	almost absent
Number of postnasals	only one	almost always two	two or rarely three
Subdigital lamellae	weakly (obtusely)keeled	smooth	strongly keeled
Dorsal pattern of male	greenish blue	pale brown, olive grey	greenish with dark reticulations and blue ocelli
Male's throat and abdomen	entirely blue	usually yellowish white	light blue
Habitat	rocky areas	mainly steppes and hillsides	rocky areas

pairs of submaxillary shields, 10 longitudinal rows of ventrals, more scale counts across dorsum, approximate absence of masseteric shield, small tympanic shield, and in color pattern (Table 1); from *L. valentini valentini*, *L. steineri*, *L. defilippii*, and *L. raddei* in having 5 supralabials anterior to subocular, complete row of granules between supraoculars and supraciliaries, 7 pairs of submaxillary shields, presence of pterygoid teeth and significant differences in color pattern; and from the *Lacerta* part I (Arnold 1973) in having much smaller size, non-serrated collar, rectilinear, or nearly so, ventral plates as well as differences in color pattern.

In the more southern regions, many of the allopatric species of *Lacerta* Part II are strongly differentiated, probably indicating a long-standing separation, but in the north the species are more similar to each other and here the reduction in range presumably was more recent. Probably the glacial and interglacial ages of Pleistocene caused the expansions and contractions of the range. Now, many species are restricted to the relatively moist or highland regions.

In conclusion, however distinct many of these species are, including our new taxon, the classi-

fication of Palearctic *Lacerta* presents many difficulties (Arnold 1972, 1973, 1989a, b; Boulenger 1920; Eiselt 1995; Lutz and Mayer 1985; Mayer and Benyr 1994; Mayer and Bischoff 1996; Mayer and Tiedemann 1982). Many of the characters used in systematics exhibit great interspecific variation, making the delimitation of species boundaries difficult. Many forms also show considerable intra-populational variability especially in the color and color pattern. And because of the uncertainties in the systematics of the group, a useful interpretation of the group's historical biogeography eludes us.

ETYMOLOGY.—*Lacerta zagrosica* is so named as it is certainly restricted in distribution to the Zagros Mountains of west-central Iran.

MATERIAL EXAMINED.—*Lacerta zagrosica* (n = 2): GNHM Re. ex. 5149–50, from the Zagros Mountains, 3 km northwest of Fereyduh Shahr, Esfahan Province, west-central Iran.

Lacerta brandtii (n = 9): FMNH 170956–62, from 10 km north of Kuh Rang, Esfahan Province, west-central Iran. GNHM Re. ex. 2873–4, from Ardabil, East Azarbaijan (Ardabial) Province, northwestern Iran.

Lacerta cappadocica urmiana (n = 3): CAS 203483, GNHM Re. ex. 168R, 169R (field numbers) from the Zagros Mountains, 30 km north-east of Kermanshah city, Kermanshah Province, western Iran.

Lacerta chlorogaster (n = 10): GNHM Re. ex. 2439-2448, from Transcaucasia.

Lacerta defilippii (n = 3): GNHM Re. ex. 4413 (1-3), from the Lar Valley, Alburz Mountains, northern Iran.

ABBREVIATIONS. — CAS = California Academy of Sciences, San Francisco, California, USA. FMNH = Field Museum of Natural History, Chicago, Illinois, USA. GNHM Re.ex. = Gothenburg Natural History Museum, Reptilia exotica, Gothenburg, Sweden.

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LITERATURE CITED

ANDERSON, S. C. 1968. Zoogeographical analysis of the lizard fauna of Iran. Pp. 305–371 in *The Cambridge History of Iran, Vol. 1: The Land of Iran*, W. B. Fisher, ed. Cambridge Univ. Press, Cambridge, UK.

———. In press. *The Lizards of Iran*. Society for the study of Amphibians and Reptiles, Athens, OH.

ARNOLD, E. N. 1972. Lizards with northern affinities from the mountains of Oman. *Zool. Meded., Leiden* 47:111–128.

———. 1973. Relationships of the Palearctic lizards assigned to the genera *Lacerta*, *Algyroides* and *Psammodromus* (Reptilia: Lacertidae). *Bull. Brit. Mus. Nat. Hist., Zool. Ser.* 25(8):291–366.

———. 1989a. Systematics and adaptive radiation of Equatorial African lizards assigned to the genera *Adolfus*, *Bedriagaia*, *Gastropholis*, *Holaspis* and *Lacerta* (Reptilia: Lacertidae). *J. Natur. Hist., London* 23:525–555.

———. 1989b. Towards a phylogeny and biogeography of the Lacertidae: relationships within an Old-World family of lizards derived from morphology. *Bull. Brit. Mus. Nat. Hist., Zool. Ser.* 55(2): 209–257.

BALOUTCH, M. 1976. Une nouvelle espèce de *Lacerta* (Lacertilia, Lacertidae) du sud-est de l'Iran. *Bull. Mus. Natio. Hist. Nat. Paris, Zool.* 294(417): 1379–1384.

BOULENGER, G. A. 1920. Monograph of the Lacertidae, Vol. 1. *British Mus. Nat. Hist., London.* x + 352 pp. (see pp. 282–301).

EISELT, J. 1995. Ein Beitrag zur Kenntnis der Archaeolacerten (sensu Méhely, 1909) des Iran (Squamata: Sauria: Lacertidae). *Herpetozoa* 8 (1/2):59–72.

LUTZ, D. AND W. MAYER. 1985. Albumin evolution and its phylogenetic and taxonomic implications in several lacertid lizards. *Amphibia-Reptilia, Leiden* 6:53–61.

MAYER, W. AND G. BENYR. 1994. Albumin evolution und phylogenese in der Familie Lacertidae (Reptilia: Sauria). *Ann. Naturhist. Mus., Wien* 96B:621–648.

MAYER, W. AND W. BISCHOFF. 1996. Beiträge zur taxonomischen Revision der Gattung *Lacerta* (Reptilia: Lacertidae), Teil 1: *Zootoca*, *Omanosaura*, *Timon* und *Teira* als eigenständige Gattungen. *Salamandra* 32(3):163–170.

MAYER, W. AND F. TIEDEMANN. 1982. Chemotaxonomical investigations in the collective genus *Lacerta* (Lacertidae: Sauria) by means of protein electrophoresis. *Amphibia-Reptilia, Wiesbaden* 2:349–355.

RASTEGAR-POUYANI, N. In press. A preliminary contribution to the lizard fauna of Kermanshahan Province, western Iran. *Proc. II Asian Herpetological Meeting, Ashghabad-Turkmenistan, 6–10 September 1995. Russian Jour. Herpetol.* 5(1).